

Path Analysis on the Effects of Peer Support and Sanitation Facilities on Personal Hygiene among Female Student having Menstruation in Sragen Central Java

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ABSTRACT

Background: Poor personal hygiene during menstruation causes the risk of Reproductive Tract Infection (RTI) in adolescent. It threatens women's health. Personal hygiene is affected by attitude, peer support, and the availability of personal hygiene facilities. This study aims to analyze the determinant of personal hygiene in adolescents during menstruation in Sragen Regency, Central Java.

Subjects and Method: This study was an analytic observational study with a cross sectional design. The study was conducted in June 2019. A sample of 200 study subjects was selected for this study by simple random sampling. The dependent variable was personal hygiene. The independent variables were attitude, peer support, and the availability of personal hygiene facilities. The study was collected by questionnaire and analyzed by path analysis.

Results: Personal hygiene was directly and positively affected by positive attitude ($b=1.38$; 95% CI=0.78 to 1.98; $p<0.001$). Personal hygiene was indirectly affected by strong peer support and the availability of good personal hygiene facility.

Conclusion: Personal hygiene is directly and positively affected by positive attitude. Personal hygiene is indirectly affected by strong peer support and the availability of good personal hygiene facility.

Keywords: personal hygiene, attitude, peer support, personal hygiene facilities

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BACKGROUND

The practice of maintaining personal hygiene during menstruation is an important behavior in health, especially in female adolescents (Tiwari et al., 2018). Poor menstrual hygiene practice causes the risk of Reproductive Tract Infection (RTI) in an adolescent by 1.4 to 2.07 times (Sumpter and Torondel, 2013). Reproductive Tract Infection (RTI) is a silent epidemic that threatens women's health in the world. Every year, there are about 10% of women worldwide affected by genital infection including urinary tract infection and bacterial vaginosis. The common risk factors for

vaginal infection are pregnancy and poor hygiene especially bad behavior during menstruation (Das et al., 2015; Fehintola et al., 2017; Geethu et al., 2017).

Personal hygiene during menstruation is affected by several factors such as age, family support, knowledge, attitude, belief in myths, information exposure, access to places, water sanitation facilities, availability of personal hygiene facilities, socioeconomic status namely family income, privacy, and comfort in maintaining hygiene during menstruation. Another factor such as the source of information about menstruation can be obtained from

parents, school, friends, and the mass media (Deshpande et al., 2018; Das, et al., 2015). The main factor that is dominant towards personal hygiene behavior during menstruation is peer support. They feel free to talk about anything that is considered private with peers. Therefore, peers have a big influence on hygiene behavior during menstruation (Eijk et al., 2016).

Based on the result of interview conducted by the researcher on ten female adolescents in Sragen regency, three female adolescents were able to mention how to take care of personal hygiene during menstruation and seven people were not able to mention how to take care of personal hygiene during menstruation, either changing pads, how to clean or wash genitals. The minimum information about personal hygiene care during menstruation caused complaint of symptoms of infection such as inflammation of the genital area, irritation, itching, and pain. Various factors prove that adolescents who have bad behavior in personal hygiene during menstruation is still high. Based on the background description, the researcher was interested in investigating and knowing more about the determinants of personal hygiene in adolescents during menstruation in Sragen Regency.

SUBJECTS AND METHOD

1. Study Design

This was an observational analytic study with a cross sectional design. This study was conducted in Sragen Regency, Central Java, in June 2019.

2. Population and Sample

The source population of the study was all female adolescents from Senior and Vocational High School in Sragen Regency. There were 200 study subjects involved as the sample of the study. They were selected by simple random sampling.

3. Study Variables

The dependent variable was personal hygiene. The independent variables were attitude, peer support, and the availability of personal hygiene facilities.

4. Operational Definition of Variables

Personal hygiene during menstruation was all actions of female adolescents in taking care and maintaining hygiene on female external genital organs during menstruation. The data were collected by questionnaire. The measurement scale was continuous, and transformed into dichotomous.

Attitude was the response of a female adolescent in the form of positive or negative assessment in conducting or responding to personal hygiene during menstruation. The data were collected by questionnaire. The measurement scale was continuous, and transformed into dichotomous.

Peer support was the encouragement from peers (school friends, playmates) that affected a female adolescent in conducting personal hygiene during menstruation. The data were collected by questionnaire. The measurement scale was continuous, and transformed into dichotomous.

Availability of personal hygiene facility was the availability of facilities and personal hygiene equipment needed by a female adolescent during menstruation. The data were collected by questionnaire. The measurement scale was continuous, and transformed into dichotomous.

5. Data Analysis

Univariate analysis aimed to examine the frequency distribution and percentage of the characteristics of the study subjects. Bivariate analysis aimed to investigate the correlation between personal hygiene and the independent variables using chi-square. Multivariate analysis used path analysis with Stata 13. There were 5 stages of path analysis such as model specification, model

identification, model suitability, parameter estimation, and model respecification.

6. Research Ethics

Research ethics consisted of informed consent form, anonymity, confidentiality, and ethical clearance. Ethical clearance in this study came from the Research Ethics Committee of Faculty of Medicine, Universitas

Table 1. Sample Characteristic

Characteristic	Frequency (n)	Percentage (%)
Age		
<16 years	62	31.0
≥ 16 years	138	69.0
Class		
Class 1	93	46.5
Class 2	107	53.5
Attitude		
Negative	79	39.5
Positive	121	60.5
Peer Support		
Weak	70	35.0
Strong	130	65.0
Availability of Personal Hygiene Facilities		
Poor	65	32.5
Good	135	67.5
Personal Hygiene		
Poor	82	41.0
Good	118	59.0

Table 1 shows that the highest frequencies were the subjects aged ≥16 years that were 138 subjects (69.0%), subjects in class 2 that were 107 subjects (53.5%), positive attitude of female adolescents that were 121 subjects (60.5%), strong peer support that were 130 subjects (65.0%), good availability of personal hygiene facilities that were 135 subjects (67.5%), and good personal hygiene that were 118 subjects (59.0%).

2. Bivariate Analysis

Table 2 showed the results of bivariate analysis. Table 2 showed that positive attitude (OR= 3.96; $p < 0.001$), strong peer support (OR= 6.16; $p < 0.001$), and the availability of good personal hygiene facilities (OR= 2.91; $p < 0.001$) increased good personal hygiene.

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RESULTS

1. Sample Characteristics

Sample characteristic was showed in Table 1.

3. Path Analysis

Figure 1 shows the structural model after conducting the estimation using Stata 13. Table 3 shows that there was a direct and positive effect of attitude on personal hygiene; it was statistically significant. Female adolescents with positive attitude had a logodds of having personal hygiene by 1.38 units higher than female adolescents with negative attitude ($b = 1.38$; 95% CI= 0.77 to 1.98; $p < 0.001$). There was an indirect and positive effect of peer support on personal hygiene through attitude; the result was statistically significant. Female adolescents with strong peer support had a logodds of having positive attitude by 1.52 units higher than female adolescents with weak peer

support (b= 1.52; 95% CI= 0.88 to 2.17; p<0.001).

There was an indirect and positive effect of the availability of personal hygiene facilities on personal hygiene through attitude; the result was statistically significant.

Female adolescent with good availability of personal hygiene facilities had a logodds of having positive attitude by 1.17 units higher than female adolescents with poor availability of personal hygiene facilities (b=1.17; 95% CI=0.51 to 2.17; p<0.001).

Table 2. Bivariate Analysis

Independent Variable	Personal Hygiene				Total		OR	p
	Poor		Good		N	%		
	N	%	N	%				
Attitude								
Negative	48	60.8	31	39.2	79	100	3.96	<0.001
Positive	34	28.1	87	71.9	121	100		
Peer Support								
Weak	48	68.6	22	31.4	70	100	6.16	<0.001
Strong	34	26.2	96	73.8	130	100		
Availability of Hygiene Facilities								
Poor	38	58.5	27	41.5	65	100	2.91	<0.001
Good	44	32.6	91	67.4	135	100		

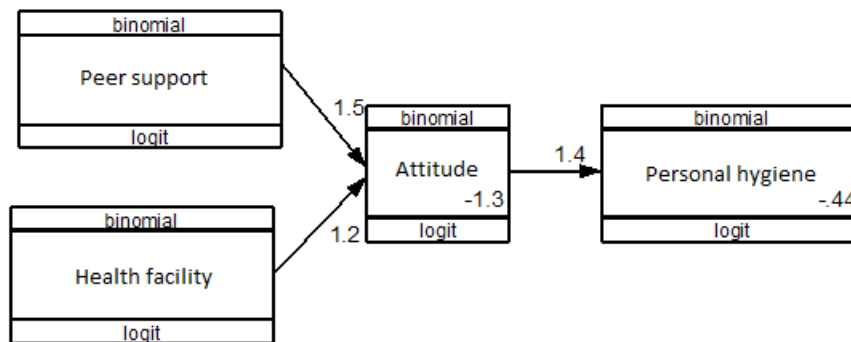


Figure 1. Structural model of path analysis

Table 3 The result of path analysis

Dependent Variable	Independent Variable	b	95% CI		p
			Lower Limit	Upper Limit	
Direct Effect					
Personal Hygiene	← Attitude (positive)	1.38	0.77	1.98	<0.001
Indirect Effect					
Attitude	← Peer support (strong)	1.52	0.88	2.17	<0.001
	← Availability of hygiene facility (good)	1.17	0.51	2.17	<0.001
N Observation = 200					
Log likelihood =-240.39					
AIC=490.78					
BIC= 507.28					

DISCUSSION

1. The correlation between attitude and personal hygiene

The result showed that there was a significant correlation between attitude and personal hygiene in adolescents during menstruation. Personal hygiene during menstruation was affected by several factors such as the availability of personal hygiene facilities, socio-economic status namely family income, privacy, and comfort in maintaining hygiene during menstruation. Another factor such as the source of information about menstruation can be obtained from parents, school, friends, mass media, and attitude (Deshpande et al., 2018; Das, et al., 2015). Attitude is a feeling, predisposition, or set of beliefs that are relatively fixed to an object, a person, or a situation (Fehintola et al., 2017; Eslamimehr et al., 2017).

Attitude contains three components, namely cognition, emotion, and behavior. Adolescent who has a positive attitude in personal hygiene are more likely to maintain hygiene during menstruation. Knowledge, emotion, and good behavior improve one's attitude (Sulaeman, 2016; Vandana et al., 2016). Positive attitude that is related to personal hygiene occurs because they get information from the media (Nuraini and Ronoatmodjo, 2018). Anand et al. (2015) explains that poor attitude associated with personal hygiene, especially on the genitals, can cause vaginal discharge. It will affect serious illnesses such as cervical cancer, tumor, and pelvic inflammatory disease.

Another opinion states that attitude is the thought and feeling that encourage someone to behave, whether someone likes or dislikes something. Supporting factor or possible condition is needed to actualize the attitude into a real act, such as facility (Fehintola et al., 2017; Alam et al., 2017; Triwibowo and Pusphandani, 2015). This is in accordance with this study which shows

that a positive attitude related to personal hygiene during menstruation in female adolescent is affected by the availability of personal hygiene facilities.

2. The correlation between peer support and personal hygiene

Based on the result of this study, there was a significant correlation between peer support and personal hygiene. The social environment of the adolescents will have a very big effect on adolescent attitude and behavior. During adolescence, an individual begins to spend more time with peers because peers have a very meaningful role for adolescents. Friends are the initial stage in adolescent association. Peers get main priority attention over family because they are considered to give more understanding, support, and shelter (Fehintola et al., 2017; Tiwari et al., 2018)

Adolescents can easily share their feelings or difficulties with their peers. Friends become one of the factors related to personal hygiene during menstruation. They are always ready to listen the problems due to the same fate. Besides, training related to personal hygiene during menstruation, especially for disabilities, is also very necessary (Wilbur et al., 2019). The development of adolescent social life is characterized by increasing influence of peers in life. Most of adolescent time is spent by doing social interactions with peers (Upashe et al., 2015).

3. The correlation between the availability of personal hygiene facilities and personal hygiene

The result showed that there was a significant correlation between the availability of personal hygiene facilities and personal hygiene.

The availability of personal hygiene facilities must be available at home or public environment (Nasir et al., 2016). One of the sanitation facilities is the avai-

lability of clean water. It can be maintained by a commitment and a program that is related to cleaning facilities in the community (Putri et al., 2017). The facilities and equipment are provided to support the goal of personal hygiene during menstruation (Das et al., 2015; Thakre et al., 2011).

The examples of the need for sanitary facilities during menstruation are sanitary napkin that is used during menstruation, clean water that is used as needed, a place to clean or toilet, soap or cleaning fluid, a place to throw the garbage (Das et al., 2017; Fehintola et al., 2017; Triwibowo and Pusphandani, 2015). Sivakami et al. (2019) also explain that the availability of personal hygiene facilities can improve good personal hygiene. The result of the study showed that the availability of poor personal hygiene facilities had 0.57 times more likely for having good personal hygiene.

AUTHOR CONTRIBUTION

Kunaryanti was the main researcher who collected and processed the data of the study. Uki Retno Budihastuti examined the conceptual framework and method of the study. Yulia Lanti Retno Dewi examined the result of the study.

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This study used personal funds from the main researcher.

CONFLICT OF INTEREST

There was no conflict of interest in the study.

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